

TUNING FILTERS HAVING TRANSCONDUCTOR CELLS

ABSTRACT OF THE DISCLOSURE

In one embodiment, a filter with a main signal path having one or more biquadratic filter sections
5 is tuned using a tuning circuit based on a biquadratic filter that can be configured to oscillate at the
filter's cutoff frequency. In one application, a tuning circuit outside of the main signal path is used to
tune each biquadratic filter section of the main signal path. In another application, each filter section
10 along the main signal path has a biquadratic filter that can oscillate and corresponding tuning elements
that enable the filter section to tune itself. According to certain embodiments of the present invention, a
biquadratic filter is made to oscillate by applying a common-mode voltage signal to the inputs of the
filter's third transconductor cell to make the cell's transconductance go to zero. The invention may also
be implemented in the context of filters having ladder structures in their main signal path.